Math 166
Calculus II (5-5-0)
Syllabus

Text and other required material: Calculus, 9th edition by Dale Varberg, Edwin Purcell, and Steven Rigdon (Prentice Hall); Internet access and a *MyMathLab* access code, a notebook or binder, and a scientific or graphing calculator. (TI 83/84 Plus is recommended.) **Calculators with built-in computer algebra systems are prohibited.** *Prohibited* calculators in this category include:

- Texas Instruments having model numbers that begin with **TI-89** or **TI-92** and the **TI-Nspire CAS**—Note: The TI-Nspire (non-CAS) is permitted.
- Hewlett-Packard: **HP 48GII** and all model numbers that begin with **HP 40G**, **HP 49G**, or **HP 50G**
- Casio: **Algebra fx 2.0**, **ClassPad 300**, and all model numbers that begin with **CFX-9970G**

You are responsible for knowing whether your calculator is permitted. Check with your instructor if you are not sure if your calculator is prohibited or allowed.

Course Prerequisites: MATH 165.

Course Description: Transcendental functions, derivatives, integrals, analytic geometry, infinite series, polar coordinates and planar vectors.

Course Objective: Student mastery of the basic calculus skill as follows:
- find function values, derivatives, and antiderivatives of various transcendental functions
- solve growth and decay applications
- evaluate definite and indefinite integrals using substitution, trigonometric substitution, integration by parts, and partial fraction decomposition
- evaluate limits of indeterminate forms
- evaluate improper integrals
- perform operations with sequences, series, and power series
- determine convergence and absolute convergence of positive series using a variety of tests
- find the Taylor and Maclaurin series for given functions
- determine the parametric representation of plane curves
- perform operations with two-dimensional vectors
- evaluate vector-valued functions
- determine curvature of a function
- as time allows, we will also try to cover polar coordinates, polar equations, and graphing conic sections.

Course Content:

Section	Suggested Homework Exercises
6.1 Natural Logarithm	1-34(odd)
6.2 Derivative of Inverse Function	1-14, 37-40(odd)
6.3 Exponential Function	1-44(odd)
6.4 General Exponential and Log	1-33(odd)
6.8 Inverse Trigonometric Functions and their Derivatives	1-72(odd)
6.9 The Hyperbolic Functions and their Inverses	1-50 EOO
7.1 Basic Integration Rules	1-54 odd
7.2 Integration by Parts	1-50 odd
7.3 Some Trigonometric Integrals	1-29 odd
TEST 1	
7.4 Rationalizing Substitutions	1-31 odd
7.5 Integration of Rational Functions	1-39 odd
7.6 Strategies for Integration	1-12 odd
8.1 Indeterminate Forms of Type 0/0	1-27 odd
8.2 Other Indeterminate Forms	1-39(odd), 41, 42, 44
8.3 Improper Integrals: Infinite Limits	1-19 odd

8.4 Improper Integrals: Infinite Integrands	1-31 odd, 36, 37, 39, 41, 44
TEST 2	
9.1 Infinite Sequences	1-35(odd), 43, 49, 50, 51
9.2 Infinite Series	1-23(odd), 35, 36, 39, 40
9.3 Positive Series: The Integral Test	1-21(odd), 27
9.4 Positive Series: The Other Tests	1-33 odd, 35-41 all
9.5 Alternating Series: Absolute Convergence	1-31 odd, 32, 39
9.6 Power Series	1-27 odd
9.7 Operations of Power Series	1-27 odd
9.8 Taylor and Maclaurin Series	1-25 odd
TEST 3	
11.1 Cartesian Coordinates in Three-Space	1-47 odd
11.2 Vectors	1-16 odd
11.3 The Dot Product	1-34 odd
TEST 4	
10.1 The Parabola	1-29 odd
10.2 Ellipses and Hyperbolas	1-31 odd
10.3 Translation and Rotation of Axes	1-11 odd, 12, 14, 17-20 all
10.5 The Polar Coordinate System	1-35(odd), 37, 38
10.6 Graphs of Polar Equations	1-77 odd
10.7 Calculus in Polar Coordinates	1-25 odd
FINAL EXAMINATION	

Methods of Evaluation:
Final Grade:
- 8%   *MyMathLab* Online Homework (using the *last* attempted score on each assignment) based upon the average of all assignments
- 8%   *MyMathLab* Online Quizzes (using the *highest* score of 5 attempts on each quiz) based upon the average of all quizzes with the two lowest quiz scores dropped (cannot drop either of the last two)
- 64%   average of the four in class chapter tests (each test worth 16%)
- 20%   comprehensive in class final exam

Grading Scale: 90-100% = A, 80-89% = B, 70-79% = C, 60-69% = D, Less than 60% = F

About *MyMathLab*:
Designed to help you succeed in your course, *MyMathLab* provides multimedia instruction, unlimited practice exercises, online homework and quizzes, and an individualized study plan—all correlated to the examples and exercises in your textbook. Your *MyMathLab* course is delivered inside a web-based course delivery system called **CourseCompass**. Before accessing your *MyMathLab* course, you need to register in CourseCompass. (Instructions on how to enroll are provided with this syllabus.)

Exercises generated by *MyMathLab* are iterations of the textbook exercises. Homework may be repeated an unlimited number of times prior to the due date. Quiz questions come directly from the assigned homework problems. Quizzes may be attempted up to 5 times before the due date; quizzes are drawn from a pool of questions with similar objectives.

MyMathLab Online Homework:

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- The online homework assignments can be attempted an ***unlimited number of times*** prior to the due date.
- The grade on your ***last*** attempt will be recorded for each homework assignment.
- *MyMathLab* homework can be done from any computer, provided system requirements are met.
- You are allowed to get help on homework, but the work submitted must be your own.
- Check the online schedule/calendar for the exact date and time the homework is due.
- Homework should be used as preparation for quizzes. Do the homework exercises repeatedly until you can do the work correctly without any assistance from notes or software tutorials.

MyMathLab Online Quizzes:

- The online quizzes can be attempted up to ***five times*** prior to the due date.
- Your ***best*** score will be recorded.
- Quizzes can be taken from any computer using *MyMathLab*, provided system requirements are met.
- You are not allowed any assistance on a quiz.
- Work submitted must be your own.
- Check the schedule/calendar for the exact date and time a quiz is due.
- Quizzes should be used as preparation for tests. Take the quizzes until you can do the work correctly without any assistance from notes.
- At the end of the semester, the two quizzes with the lowest grades will be dropped with the exception of the last two, which cannot be dropped.
- Do not click outside a quiz window once you have begun the assessment, and do not attempt to search for help buttons, such as *View an Example* or *Help Me Solve This*. Such actions will create an ***access needed*** message causing you to loose that quiz attempt. However, if you have any of the five attempts remaining, you ***may continue on to begin another attempt*** at the quiz with no assistance/intervention from the instructor.